

Abstract

The object of the invention is to provide high-sensitivity detection of fine patterns on a transparent inter-layer insulative film and defects on the same layer. Detection is performed with lower-layer patterns and defects on the same layer defocused, thus allowing detection of just the defects from the process that is intended for inspection. An inspection apparatus for a specimen on which a plurality of patterns intended to have identical shapes are arranged in a uniform manner includes: an imaging optical system with a relationship between illumination wavelength and objective lens numerical aperture that provides a resolution of no more than 0.18 microns, or preferably no more than 0.13 microns; an opto-electric converter disposed at an imaging position of the imaging optical system; an auto-focus optical system formed with an optical path disposed separate from the imaging optical system, with illumination applied at an incident angle of at least 85 degrees, preferably at least 88 degrees; means for adjusting a focal position of the imaging optical system based on a detection signal from the auto-focus optical system; and means for processing electronic signals from the opto-electrical converter.